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Translation of the Suiones**

**Bernhard Bierschenk
Inger Bierschenk**

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**Copenhagen University
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Mirroring English Values in the Translation of the Suiones

**Bernhard Bierschenk
Inger Bierschenk**

Abstract Six translations into the (1) Swedish, (2) Danish, (3) English, (4) German, (5) French and (6) Italian languages have been carried out. Based on self-reference and self-organization, the structure of the third translation is shown to have a certain affinity with system dynamics of the first two. To attune one's writing to a predetermined (internal) order means that the Agent [A] and Objective [O] of the [AaO] system is binding both components to the dynamics of the produced textual flows. They are manifestations of the potential energy surface (PES), which extend to free energy surfaces (FES). Effective operations have been carried out for the formation of corresponding landscapes. With the applied mirror-strategy, it has become possible to carry out rigorous examinations on the roots of (A) and (O). The effects show distinct variation not only with respect to the original Latin text but also with regard to its Swedish and Danish translations. The (A) root of the English structure has developed into *Adaptability* while (O) root has settled in *Adventure*. This result indicates a diverging line between the underlying Scandinavian and the English perspectivation. This line goes between cautious thinking in the Scandinavian and forceful thinking in the English case.

As part of the Northern sphere, the study of the English translation of Tacitus' text on the Suiones appears, next to Swedish and Danish, as a motivated issue. The processing of the English text is expected to reflect the translator's impact on already existing structural constraints. The works of Tacitus represent not only a first detailed description of the ancestors of *Magna Germani* but also an account of the Danish and English *Anglo-Saxons* (Toswell, 2010). The ambition for studying the English translation as an extension of the Swedish and Danish translations comes from the geographical observation, that in fact the insular quality of Denmark and England had saved them from successful invasions by the Swedes and other German tribes as well which very well may have contributed to a unique conservation of the Anglo-Saxon culture and civilisation.

Searching for further descriptive properties of the neighbouring regions to Denmark and Sweden suggests that Tacitus was probably right when he refers to the Angles (Latin Anglii) as a tribe that was situated far west of the Dutch islands in the North sea. The Angles were living behind ramparts of rivers and woods, and therefore were inaccessible to attack. This view is strengthened by a general conviction of a striking affinity between Anglo-Saxon of England and Cimbri or Teutones, living in the Schleswig-Holstein, a region of Southern Denmark and northern Germany. Moreover, modern DNA studies (Johnson, 1997) suggest that the people of eastern England and northern Germany are closely related which is in agreement with archeologically produced evidence, e.g. the drinking horn used at the Symbol (Ward, 2001; Grane, 2012). Further, the same kind of support makes clear that the 'Danes', originating from the East of Sweden, emigrated and because of their war-like behaviour, settled not only in Denmark but also in England. Its history is largely reflected in a 'warrior culture' (Bauschatz, 1985) bending towards conquest. A series of small entries in the

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Anglo-Saxon Chronicles are recording events which are underlining a warrior culture which led the Roman Pliny the Elder to call the region 'Barbaricum' (Grane, 2012).

In this year, frightening signs appear in Northumbria and terrify the people. These were great lightening flashes, terrible dragons in the air and there followed a great hunger and God's church in Lindisfarne was laid low by violence and slaughter at the hand of the heathen.

Soon another prayer was being written in Chronicles all over Europe, and it demonstrates the absolute fear that Viking (read: Dane) raids evoked: A furore normannourum libera nos, domine – O' Lord, deliver us from the fury of the Norsemen. (Reproduced from Skyelander.orgfree.com /viking1.html)

After at least three waves of attacks on England, a period of political adjustment and assimilation took place. Characterized by a kingly family of Teutonic origin (Toswell, 2010, p. 42) the Anglo-Danish appeared with a centralized power and managed to carry out raids as an accepted way of life. Moreover, there was little that could prevent violent acts by individual warriors.

Many traditions of import for governmental organization and the development of skills for building ships for long-distance trade are conditions that surrounded the formation of an Anglo-Danish kingdom. In medieval times parts of England, Denmark and modern Sweden had founded an Anglo-Danish empire. Ever since 'King Gorm den Gamle' ruled in this kingdom, the inhabitants still live by their more than thousand year old culture and values reaching back to the Teutonic age (Sumner, 2008). This implies continuation between past Teutonic honour and heroism and the present-day expressions of the produced and shaped *Zeitgeist*. From a cultural perspective it means alertness as well as advances in developing capacity over millennia. According to Toswell (2010), the reception of the Germania of Tacitus in England is seen as a useful text for the interpretation of the 'heroism' of the Englishmen.

Reception Literature

One effect of the *splendid isolation* of the region, a term coined by George Eulas Foster (1847-1931, may have been that the English people understand themselves as differing in major respects from any continental nation (Toswell, 2010, p. 42). Already Caesar made an important distinction between the Gaul inside the Limes and the Germans outside it, which seems to be based on cultural geography and hence, the peoples' way of thinking about their culture and civilisation. Therefore, Anglo-Saxon culture may be identified with a factor of enduring influence on the English way of thinking and communicating ideas. Despite centuries of engagement in European affairs, there is an English desire to preserve this condition, which however also holds alive a continuous fear for continental involvement in English affairs. In focus in the present study is therefore the question how this attitude may have influenced the English translator in his endeavour to comprehend the image that Tacitus has created and communicated through his writing on the Germanic tribes of the Suiones.

The presentation of the Suiones for English speaking readers is given in the English translation of M. Hutton (1920/1958) which is considered to be standard work. Both in its writing and its spirit, the English version seems to communicate a *genuine sense* concerning the original (Gilbert Ramsay, 1915, Preface to Tacitus). However, at present it is unclear what this means. Maybe it represents the conception of the English scholars that it is an ambitious translation, which excludes all words which may have been alien to Tacitus' way of thinking. Still, special difficulties are connected with receptive translations (Martínez, 2010). For

example, they may in unpredictable ways have influenced the appearance of the original in a modern version.

Traditionally, the study of text production has been insensitive to the intentional dynamics and perspective changes of the author of the original. Furthermore, timing and spacing in textual flows are influencing resonance properties of a work and may reflect differences in articulation through variations in the displacement of textual strings. Therefore, some prior contextual conditions need to be accounted for in their causal determination. Thus, a translation is expected to have a distinct effect on the range of attitudinal changes. These concern the translator's own position in relation to the original and thus the way in which he is grasping the ideas in a text. Further, as a product of changing attitudes, it is predictable that pure articulation is anchored in the producer's *text building behaviour*. Additionally, it can be anticipated that the functional relation between a position formed and the conceived meaning-generating context of the original gives rise to a translator-specific perspectivation.

A first measure of the difficulties posed through the translator's comprehension is the degree to which a dimensional re-distribution of generated depth-relations has taken place. The notion *depth* refers to the manifestation of structural distances. This implies the assumption that the structure of a text by necessity is coupled with system dynamics. The method to be used for analysis is Perspective Text Analysis (PTA/Vertex) which has the demonstrable capacity to extract this structure and to attune to system dynamics. As the name of the method indicates, the analysis is concerned with the way in which people are articulating their perspective through its formulation into natural language expressions. It follows that the method guarantees the establishment of the quality (or essence) of a particular textual expression (I. Bierschenk & B. Bierschenk, 2011).

Method

According to the design of the study, it is likely that the method is producing multiply stable trajectories, which are adapted to this particular task of translation. In binding intentional dynamics to the produced alternations in the textual flows, it is supposed that this procedure is manifesting an effective operation in the establishment of corresponding energy landscapes. A developing landscape and the dynamic characteristics of a textual flow show the structure and dynamics of strings of graphemes and their clusters of composites, which all are manifestations of the underlying potential energy surface (PES). A broader view, which extends from the geometric properties of PES to the properties of a free energy surface (FES), concerns the observable kinetic as well as the thermodynamic properties obtained from the model of "spinning dots" (B. Bierschenk, 2001a, b).

Characterising the structural text dynamics with FES represents an important step in the analysis of an energy landscape. The calculation of its thermodynamic properties is performed directly from the preceding flow dynamics of PES and constitutes the key to the production of state attractors and their naming. To regard the attractors as named relations means to regard them as names of mutually dependent conceptual relations. The way in which the particular operation of translation has influenced the naming function is illustrated with the energy the text producer has invested.

Participants For the first time, the English translation (B. Bierschenk, 1993) was studied with the translator as the individual text producer in focus. This means that he is the "token of a biological system" (Kugler & Turvey, 1987, p.213) which has the necessary writing-reading-re-writing capacity. Since the single individual performs the task according to natural law, the method pre-requires singularity. Hence, the individual text producer provides the unique bio-physical context and Perspective Text Analysis is used to identify the individually defined coordinates of the resulting text space.

Materials In order to give weight to the hypothesis that rotational dynamics is basic to the effects of selective textual movements, an unbiased specification of movements during production time is achieved on the basis of the Agent-action-Objective (AaO) axiom (B. Bierschenk, 2011). This paradigm has theoretical significance since it steers and controls the A's and the O's of the established AaO-units. Further the movements are controlled by two clocks, namely the A-clock, governing the Agent-component, and the O-clock, governing the Objective-component. In using a rhythmic, clock-like working mode, it has been possible to demonstrate the existence of dynamical patterns and to determine their phase-dependent displacements in relation to one another. Further, a meaningful split and the splicing of the involved strings relates to the fact that "free parameters are not needed" (Greene, 1999, p. 383). PTA/Vertex does not require that the method is fitted in one or the other empirical context.

Procedures A demonstration of invested kinetic energy means the materialisation of PES. In addition, it generates flow-fields in which produced strings (σ) can vibrate and fluctuate. Further, when these strings are resonating ($\Delta\sigma$) due to an energy investment, they are producing a spectrum for resonance expressions. Following up this line of reasoning implies a semantic-free characterisation of patterned strings. Since the AaO-system is utilising the calculation of string rotations, it is possible to determine the kinetic energy, invested into the A-component, carrying the dimension of Intention and the O-component, carrying the dimension of Orientation.

The discovery and concentration of invested kinetic energy presupposes the "string-hypothesis" (Greene, 1999, p. 298) and the assumption that kinetic energy is stored in "wound" strings. In a more abstract sense, a wound string consists of a tiny one-dimensional loop. Furthermore, the string-hypothesis implies that a string compound can be approached without any intervening disruptions. When there is no rotation axis, it means that spinors are describing a string compound, which rotates about itself.

When kinetic energy has been invested, a looping string is turning itself with a spin- $\frac{1}{2}$, which means that a string begins to resonate. Since the involved angles (ϕ, θ) represent the magnitude of a string carrying spinor, this magnitude can be used in the determination of the thermodynamic properties of a particular string of graphemes. Consequently, the energy invested in a string can be made evident and strings can be *recovered in perfect order and without intervening disruptions* (Baeyer, 1999). The angle represents the magnitude of the spinor and the tilt of the empirically defined grapheme string is [$\text{arc}(\phi, \theta) = (2\pi/360^\circ)$] (Hestenes, 1986/1993).

Manifestation of Potential Energy Landscapes

Translating an Ancient Latin text into modern language with the purpose to maintain both style and perspective of the original author seems to be a special kind of artistic endeavour. In particular, Tacitus' text on the subject of Suiones elicits a translator's conceptions of whether the linguistic formulations may conceal or reveal the subject's knowledge of the original. Any translator, who is tackling Tacitus, has to face his embedded perspective and try to do the best of the instruments at hand. Many classicists have witnessed on the extraordinary task of transferring Tacitus' thoughts into modern grammatical carriers. Since consciousness is carried over primarily by syntax (I. Bierschenk, 1989), and since Tacitus' kind of Latin is at times severely abstruse because of the author's elegant use of it, the translation will be permeated with anticipations. The present analysis will penetrate behind the textual surface by analysing its covert textual perspective which is steered by the Agent component. In the textual flow, it has its functional position before the verb. The Objective of the steering function is perspectivated in the position after the verb.

Flow in Translated Latin

A report on the language spaces formed by Tacitus himself has been published (I. Bierschenk, 2012) and can be studied in comparison. However, before entering the translation flow, the English version is introduced:

Beyond these tribes the states of the Suiones, not on, but in, the ocean, possess not merely arms and men but powerful fleets: the style of their ships differs in this respect, that there is a prow at each end, with a beak ready to be driven forwards; they neither work it with sails, nor add oars in banks to the side: the gearing of the oars is detached as on certain rivers, and reversible as occasion demands, for movement in either direction. Among these peoples, further, respect is paid to wealth, and one man is accordingly supreme, with no restrictions and with an unchallenged right to obedience; nor is there any general carrying of arms here, as among the other Germans: rather they are locked up in charge of a warder, and that warder a slave. The ocean forbids sudden inroads from enemies; and, besides, bands of armed men, with nothing to do, easily become riotous: it is not to the king's interest to put a noble or a freeman or even a freedman in charge of the arms. (Translation: Hutton, 1920/1958)

Through the A- and O-functions it has been possible to put into operation the movements of perception and action that constitute the textual production and make manifest the text producer's intention as well as his orientation. Thus the A- and O-components together with the verb function are the constituents of the so called *Functional Clause* (I. Bierschenk, 1992, 2011). Hopefully it will become clear in the following sections that ordinary grammar, i.e., semantic interpretation of linguistic utterances, has no relevance in a perspective text analysis. This kind of functional analysis, namely, builds on the properties of a flow, such as forward movements, whirls and vortices, and also time. The measurement of this flow is accomplished by means of the calculation of magnitudes, reproduced in Table A1 of the Appendix.

Examples (1-2) show the positional marks of A and O in the textual flow (lines 4-5 of the text). (An empty A-position is denoted with (\emptyset_A) and an empty O-position with (\emptyset_O). The verb is underlined. The asterisk (*) marks a new functional clause.)

(1) ... : the gearing of the oars * \emptyset_A is \emptyset_O * \emptyset_A detached \emptyset_O as on certain rivers, ...

(2) ... and reversible as occasion demands \emptyset_O , ...

The typical way of changing verbs to a noun function in ordinary grammar by the progressive flexion form and by a preceding definite article is invalidated. Thus the quest of the analysis is to identify and encode all verb forms and participles as verbs (*gearing* and *detached*), because the verb has the function to separate the A- and O-fields of the sentence flow. Consequently, there may be more functional clauses than grammatical ones, which results in the detection of deeply embedded (immaterial) flows.

The second verb (*is*) of the first example is marking a new functional clause and must be surrounded by an Agent before and an Objective after it. Both are immaterial. The same holds for (*detached*). In the forward moves, those dummy places are to be filled up with values of strings (approx. words), such that the A-dummy value is copied from above, and the O-dummy value from below. Example (1) shows a phrase (*as on certain rivers*) that is ended by a clause border. This string sequence will be the filler value of the O-dummy. Should there be a brake in the flow, for example in case there is a full stop after an O-dummy, this dummy remains empty. (It should however be pointed out that there is no such concept as intransitive verb.) The O-dummy of (*is*) takes the entire A- and O-“block” as its filler. Since the A-dummy is an immaterial string, this filling or copying procedure will sometimes result in intertwined strings and string sequences. To keep track of the string movements, those spinning magnitudes are calculated as roots, which will be elucidated further on.

Of particular interest should be to study the textual properties that are causing the layout of this landscape. The potential energy surface of the translated Objective may be inspected in Figure 1 which presents a fairly dynamic shape.

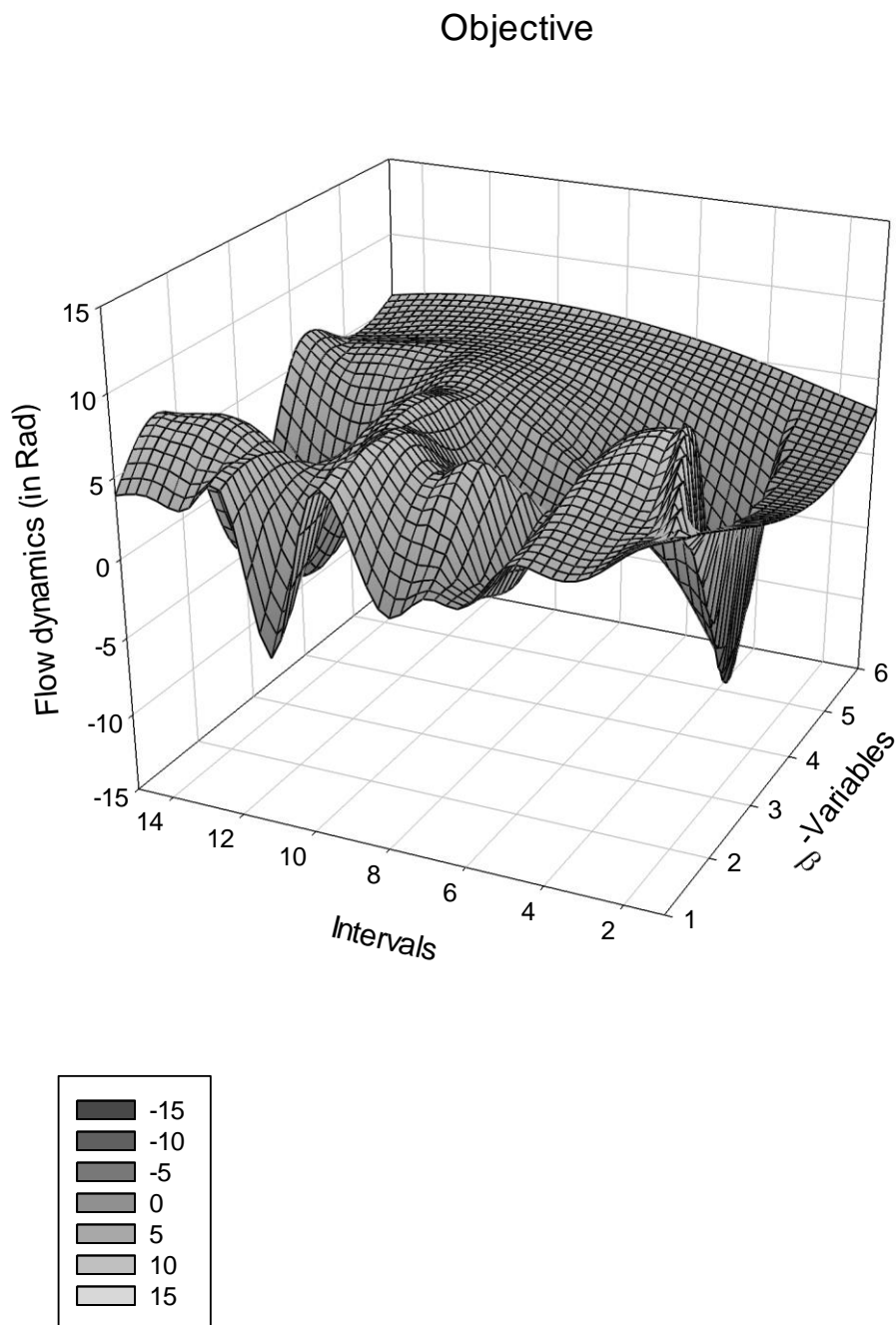


Figure 1 *Potential energy surface of the Objective space*

Objective Space

The calculation of A- and O-dummies will be illustrated in connection with the closer examination of their contribution to the graph formation. (For the graphs, SigmaPlot, 2008, Version 13, has been used.)

The text is a living substance which is driving rhythmically forwards in swinging movements depending on gravity and acceleration of its parts. Each component (A and O) has a magnitude (base value), which triggers various rotation values depending on textual level and type of case (messenger pattern) (I. Bierschenk & B. Bierschenk, 2011, Table 8, p.12). The cases are nine for each component. For example, the base messenger value for a manifest A-component (case A5) is 3.14 (winding factor $W=1/1$, see Winfree, 1980). In such a case, the grapheme level (character or corresponding mark) is counted with ($W=1/100$) within string (word level), i.e., 0.0314 multiplied with the number of graphemes. Thereafter 0.314 is added, which is the value of the string within the component ($W=1/10$). All the words within the component are then summed up. Finally the base value for the case is added to the sum. Likewise, the verbs are counted at the grapheme and word level, as also the clause markers and the sentence markers (full stops and similar). In the summation of a component, the verb is added to (O), the clause marker to the following component and the sentence marker to the preceding component. In the first example, the colon (:) is a clause marker and in the second it is the comma (,) and the conjunction (*and*).

As an illustration, the Agent strings of Example (2) have been calculated as follows: [(,) = 0.3454 (i.e. $0.0314 \cdot 1$) + (*and*) 0.4082 + (*reversible*) 0.628 + (*as*) 0.3768 + (*occasion*) 0.5652 + 3.14 \approx 5.46].

The intervals are 17 in this text. Its flow is marking at least two distinct basins, one at the beginning and one at the end. In between, a buckling ridge is formed. Some articulation points of relatively large value appear in the first and third intervals as the magnitudes (≈ 7.31) and (≈ 7.77) respectively. Similar values in the ninth (≈ 7.53) and tenth (≈ 7.08) intervals contribute to the dynamics. Further, two marked depths are visible, the first one in the third interval (≈ -9.11) and the second in the thirteenth (≈ -4.94). A few other deep portions have been realized although hidden in the graph, namely in the eleventh (≈ -4.31) and the fifteenth intervals (≈ -4.57). These two depths are forming the basin to the left.

Finally some comments on the Agent component. Before the verb (*demands*) the Agent strings are (... *reversible as occasion*). When it comes to calculation, the value of the clause marker (*and*) will become connected to the other strings, as also markers like comma. The example shows that strings before the verb shall not be interpreted with some semantic preference but only with reference to position. This principle is even more evident in the first example. Here the Agent is (*the*), which is the filler strings of the two A-dummies. Whether this word is expressing some energy or not to form a space will be a matter of calculation.

The substantial variables buckle in the first and third intervals and are marking the points that are referring to the following places of articulation: (... *possess not merely arms and men but powerful fleets...*) and (... *with a beak ready...*). In the first case it should be obvious that the number of strings is crucial for the value to come about. The verb and eight word strings connected twice by clause markers ('*and*' and '*but*') represent a value of (≈ 4.18).

As was mentioned earlier, the base value of this kind of component is 3.14, resulting in the final value (≈ 7.32). This is a clear example of the stacking principle of manifest string sequences, which lead to a visible change in the textual surface landscape. This one can be viewed as the first crest in the graph. The second place has been calculated as (3.0615) for the strings and has led to the total sum of (≈ 7.77).

Now, how come that fewer strings in fact give rise to larger magnitude? The answer is the base value, which is 4.71, when a preposition (here of instrumental type) is breaking a new angle in the articulation flow (case O7). The buckling surface in the ninth and tenth intervals is signalling similar circumstances (... *with no restrictions*) and (... *as among the other Germans*). The second case is inclined too, however with a base value of 3.87 because

of (*among*) (case O6). Its magnitude is decided merely by the prismatic functioning of the number of words belonging to this angle.

The deepest point corresponds to the first O-dummy of the strings (... *ready to* \emptyset_O * \emptyset_A *be* \emptyset_O * \emptyset_A *driven forwards* ...). As already has been mentioned, an O-dummy as the last string of a clause that is followed by a new clause, copies the succeeding values of both the A- and O-strings. However, to keep track of the intertwined rotations, we have to calculate the A-dummies first, which get their values from above.

The Agent that is channelled down to the placeholder is (*, that there* ...) with a rotation value of (≈ 4.40). This value shall be copied at the first A-place, whose base value is 5.5 (case A8). Thus, it rotates with a magnitude of ($5.5 - \sqrt{4.396}$), which amounts to (≈ 3.40). The rotation of the last A-dummy implies that one further root extraction is added to the first value, i.e. ($5.5 - (\sqrt{5.5} + \sqrt{4.396})$), whose total is (≈ 1.06). From this example follows that the value of the second O-dummy contains this A-dummy value + the value of (*driven forwards*), which is (4.2076).

Now, let us go back to the first O-dummy. With a base value of 6.28 (case O9), its component value is (6.7444), which shall finally be reduced with all the copied values of the described procedure. The solution therefore is: $6.7444 - (\sqrt{5.5} + \sqrt{4.396} + \sqrt{6.6568} + \sqrt{5.5} + \sqrt{4.396} + \sqrt{5.5} + \sqrt{4.2076}) \approx -9.12$. The described example is an illustration of the accelerating downwards rotation of the textual flow.

To get a fuller picture of the characteristics of deep rotation, we will turn to the next lower values (≈ -4.99), (≈ -4.58), and (≈ -4.31). The corresponding textual strings are the following: (... *nothing to* \emptyset_O * \emptyset_A *do*, ...), (... *interest to* \emptyset_O * \emptyset_A *put a noble* ...) and finally (... *they are* \emptyset_O * \emptyset_A *locked up*...). The three articulation places have in common an O-dummy that is opening up a new functional clause. This is always the case when the pointer (*to*) is immediately followed by a verb, and also when two verbs are combined. Whether the magnitudes will result in some visible downward rotation is due to the values of the strings.

One articulation point is causing the flow to move fairly evenly around zero, namely the first variable in the eighth interval (≈ -0.22), which refers to the O-dummy in the sequence (... *is* \emptyset_O * \emptyset_A *paid to wealth*, ...). As in the previous example, it triggers a new functional clause, although the total of the calculated values is larger because of the copied Agent, (*Among these peoples, further, respect* ...). Its magnitude (≈ 4.79) prevents from accelerating too much downwards. Now, the Agent space will be discussed in the following paragraphs.

Agent Space

In examining the Agent space of Figure 2, it becomes obvious that there are complementary flows in the two graphs. Where the Objective shows high fluctuation, the Agent is flattening out. An example appears in the third and thirteenth interval. Where the Objective texture dives, the corresponding Agent texture is speeding up. On the whole, the Agent pendulum is less fluctuating. This is so because the Agent strings, material or immaterial, often are repeating themselves. Therefore, the variable values may be identical within an interval while the Objective values vary. This fact is evident especially in the third, fifth, and eleventh intervals, where the values (≈ 4.40), (≈ 3.89), and (≈ 3.40) respectively are repeated four times.

The articulation point representing the largest magnitude is to be found in the very first interval, namely the extensive Agent (*Beyond these tribes ... the ocean*,). It contains fourteen words before the verb (*possess*) and three clause markers (commas), and with a base value of 2.36 (case A4) it becomes a total sum of (≈ 8.00). This rotation has formed the rightmost bright wave or wing of the graph. In the thirteenth interval the value (≈ 7.35) refers to the sequence (*; and, besides, bands of* ...), which is a way of linking strings as in the first case.

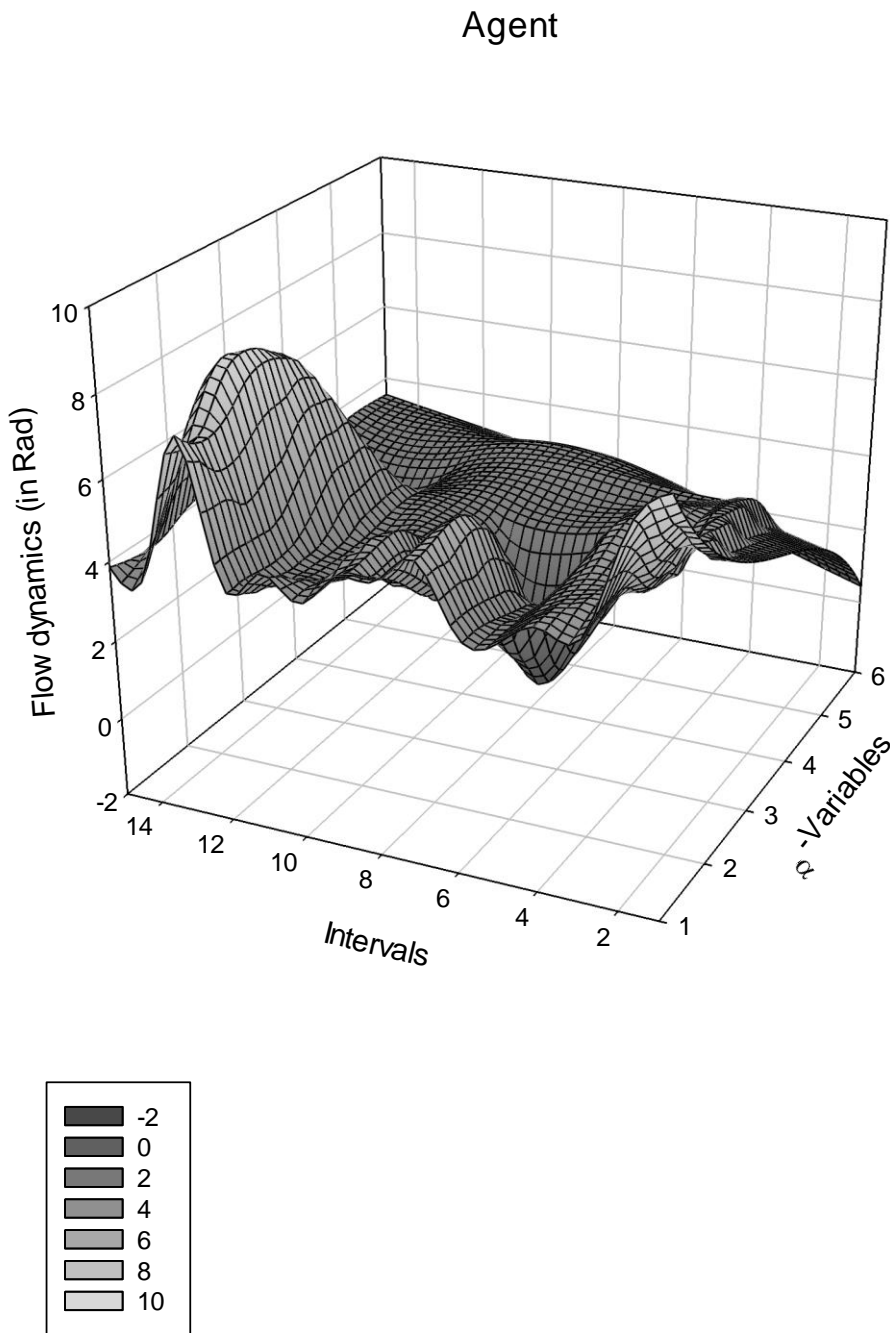


Figure 2 *Potential energy surface of the Agent space*

The value contains the string value (3.483) and the base value 3.87, because of the angle function of the preposition. This Agent is repeated three times, which may explain the strongly blown up crest to the left in the graph.

The Agent differs from the Objective with respect to obtained depth. No value below zero-line has appeared. Only one articulation point is close to zero, and this is marked as a dark tip in the sixth interval. The textual place is representing the second A-dummy in (*the ... \mathcal{O}_A is $\mathcal{O}_O * \mathcal{O}_A$ detached...*), which was discussed in connection with Example (1) above. The

value of the dummy consists of its base value 5.5 reduced with the root of the previous Agent, i.e., the first A-dummy, plus the root of itself, thus $(5.5 - (\sqrt{3.8936} + \sqrt{5.5})) \approx 1.18$.

Thus two dummies in a sequence will always lead to low magnitudes. The manifest Agent that has been channelled down is (: *the*) and represents a base value of 3.14 and a total value of (≈ 3.89). Because of the channelling function of this kind of textual flow in the translation procedure, this value, in spite of its low potential, has had an influence on the rotating movements. Finally, it is worth mentioning that the Objective of the Latin shape appears much more compressed than its English counterpart, whereas the two Agents show similar degrees in the dynamics of the flows, although they result in different shapes (I. Bierschenk, 2012).

Established Free Energy Landscapes

While PES, compared to FES, is the more fundamental entity, there is no requirement for a subjective parameter choice. However, FES necessitates a subjectively determined criterion for the working of the Zipper mechanism (B. Bierschenk, 2001b). Applying the Zipper represents an important intermediate step in the analysis of the relations between mutually dependent composites.

The presence of distinct folding intermediates implies that there are other local minima in the landscape of the Orientation space. An examination of the emerging dimensions will be shown to point towards local as well as global state attractors, which however are regionally separated. Such a result corresponds very naturally to the computation of different kinds of changes in intention and orientation. Especially the occurrence of a minimum below sea level is indicating attractors that develop on the basis of shadow-like (i.e., *soft-moulded*) overlaps.

In general, FES is low dimensional and obtained from PES by averaging over all other degrees of freedom for fixed values. This averaging is repeated to provide the fusion dynamics (an interpolation) over the range for which the order parameters have physically motivated values. While *Strain* represents some measures of compactness, *Shear* concerns the fraction of native contacts present. Thus, structural quantities such as the radians of the order parameters ($X = \text{Strain}$, $Y = \text{Shear}$) provide the foundation. Some composites fold easily, while others require more energy. Hence, the fusion dynamics refers to invested energy. In terms of FES, its thermodynamic equilibrium determines geometrical properties that can be observed directly from its surfaces. As shown in Figure 3, a minimum on FES is a point from which a small displacement of a composite in any direction is increasing the fusion dynamics. Just as for a basin surrounded by mountains on all sides, any step in the fusion process is uphill.

At least two regions with strong bottle necks can be discerned. Understanding how a particular system can relax efficiently to certain structures or substructures (within a particular region) requires a global view on energy investment and consequently on the evolving landscape. Even knowledge of the division of barrier heights that separate the local minima is “not generally sufficient to understand the global dynamics” (Wales, 2003, p. 2), unless the minima that separate the actual barrier are identified. In the Orientation space of Figure 3 can the low regions (fusion dynamics < 10) be referred to faster folding and thus, to lower barriers. Just as for the basins at the right- and left-hand side, low barriers in the foreground are surrounding the foothills at the mountain in the foreground. Thus, any step in the fusion process must be uphill. A path below sea level is indicating that the system first explores swiftly folded composites before it escapes to a pathway of deep folding (< 0) as for example in the forefront at the left-hand side.

The Attractors of the Orientation Space

The highest mountain peak at (shear=4, strain=16) represents the highest barrier ($q \approx +189$), which is named *Hazard*. The more climbing is involved the slower becomes the path. This is an expression of the complexity of the specifying dependency relations, which require a number of singularities (or measured positions) in order to specify this location on the mountain.

Orientation

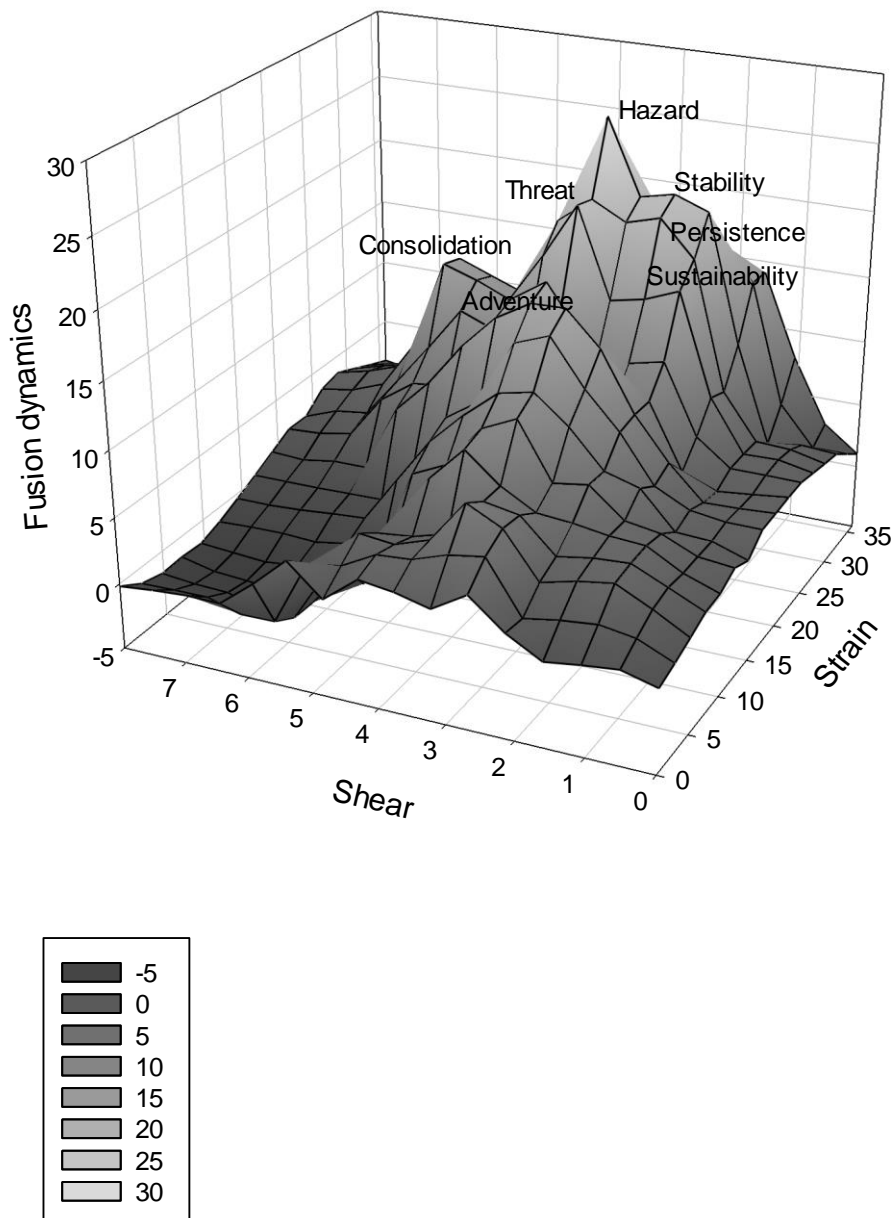


Figure 2 *Attractions in the Orientation space*

Most hazards are hidden or potential and thus imply only theoretical risks of harm until a hazard becomes activated. When it becomes active, it can create an emergency situation and the stored energy may manifest itself in a certain level of strain.

Below the peak, at (shear=5, strain=24) appears *Threat* with a magnitude of ($q \approx +182$) which is marking possible harmful forces or violations of barriers (physical or legal). Unauthorised access to safety implies an indirect form of imposing dominance and refers to the power to control physically the enforcement of laws.

The lower mountain is defined by *Adventure* which describes the position at (shear=4, strain=4). This state represents the global attraction in the Orientation space and has a magnitude of ($q \approx +165$). Adventurous activities always refer to bold and usually risky undertakings which naturally have uncertain outcomes. Risky situations require supervision which may give a strong experience and provide for a gain in confidence.

Hence, for various reasons, *Consolidation* with a magnitude of ($q \approx +160$) at (shear=5, strain=30) needs to be conceived of as a long-range process during which loosely organised people have come civilized and under the domination of a kingly household. In the actual context it may be sufficient to refer to this source of unification power. Ruled by a king, *Consolidation* here means possessing authority over both a geographical region and the people of its territory.

Moreover, *Stability* with a magnitude of ($q \approx +134$) at (shear=3, strain=35) needs to be conceived of as an expression of robustness of the civilisation that can withstand stress without being distorted or collapse under harsh conditions.

Distinctive to the region on the right-hand side is a series of attractor states, which is headed by the appearance of *Persistence* at (shear=3, strain=33). Characteristic for this state is the value of ($q \approx +130$). Further, the state designates improvement of survival conditions, which may guaranty the maintenance of civilisation and the support of wealth.

Sustainability at the position (shear=5, strain=31) represents a magnitude of ($q \approx +125$). By looking inside as well as outside, this attractor has important functions in a development that must meet essential needs, based on past experiences. It marks an ability to endure and to take on responsibilities concerning economic, as well as civil and environmental risks. Moreover, it implies continuity and freedom from indecision. A relatively stable conduct carries this capacity, which moreover appears to be typical of a prosperous state.

The Attractors of the Intention Space

Behavioural action precedence presupposes an *Agent*-component which stands for the intention dynamics, governing one's perspective. The structure, established below in Figure 4, is characterising the configurations of the sub-spaces. The landscape shows two dominating mountains. Just as the structural expression of a viewpoint is representing a particular orientation so is a point of observation a structural expression of intention. Both make full use of the translator's articulation capacity, which is reflected in the coupling of the pathways in both spaces.

Through a cyclic extraction of the information invariants of the configuration in the O-space, it will be demonstrated that the working of the A-component has caused a redistribution of the manifested articulation potential. For example, a single terminus as descriptor of a state in the Intention space can follow itself and thus, reappear on the same dimension. But a terminus can also return on different dimensions and at different levels on the intention path. However, this looping phenomenon has been omitted here from an explicit representation and discussion.

The highest region at the mountain appears in the position of (shear=4, strain=4) and carries *Adaptability*, which has a value of ($q \approx +189$). This height is also characterising the global or final state attractor in this space. Concerning this state in the Intention space, it can

be concluded that the underlying rotations have changed the structural embedding. It is worthwhile to keep in mind that the Intention-space must get its description through the Orientation space. To understand this process, apparent differences in the structural relationship need to be reflected in the evolutionary freedom of the separated components. Evolutionary freedom is largest in the initialising phase of text building, because it provides the condition for novel changes in the constraining perspectivation.

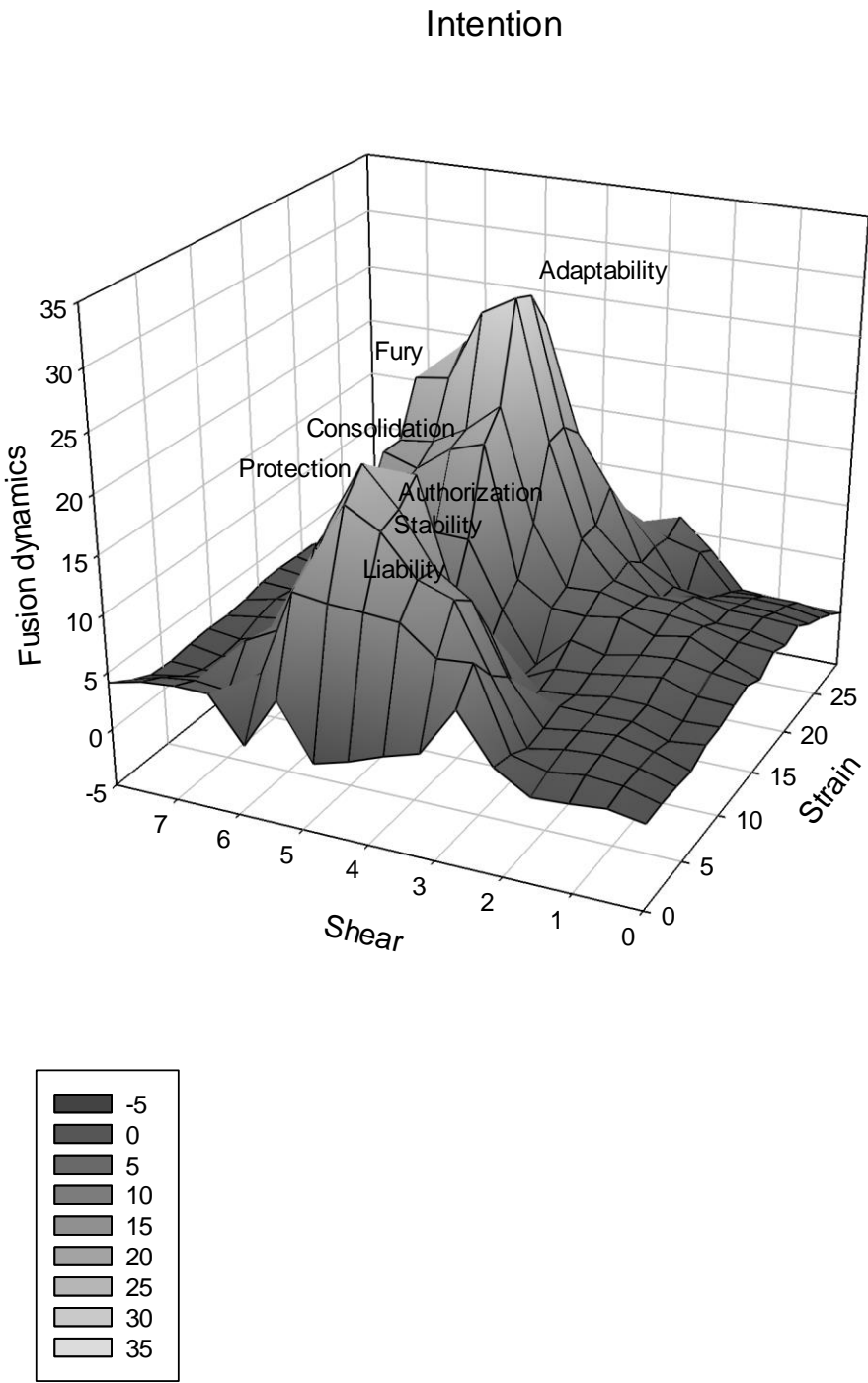


Figure 4 *Landscape of the Intention space*

Since the Agent-component stands for perspective governing, the text translation necessarily represents growing shades of the translator's intention.

Like the previously presented analysis of the Swedish and Danish translations, the governing processes are founded on the dependency between direct information pickup of structural information and dynamic pattern generation, produced through angular rotations. It follows that the depth relations in a translation must come about through both the act of reading and the act of writing. As in the analysis of the Orientation space, the space formation of Intention is the other's complement.

A broad understanding of the attractor requires its embodiment in situations where novel senses are developed that allow not only to learn and change with greater capacity but to interact over distances. This is an important property of professional capacities and the conditions that surround the formation of novel technologies. Thus, adaptability contributes to growth. Particularly those interested in technological change see adaptability as an urgent necessity and as a competitive edge. To be effective requires a sense of how actions have to be performed and how they are affecting strategic objectives.

Hence, in the domain the scope for roughness at (shear=5, strain=7) is described by *Fury* with a value of ($q \approx +152$). This state determines the forces and factors that may interfere with one's ability to control severe survival conditions. To varying degrees environmental and socially determined hostilities exist and may strongly influence destructive forces. However, with an unbounded determination to gain success, inevitable hostile forces need to be overcome.

In this neighbourhood *Protection* at (shear=5, strain=11) with a value of ($q \approx +150$) can only mean an assertion and conviction that success will be gained no matter how long it take to eliminate calculated offenses. Pushing for resolutions requires to keep protection and to build on it in order to gain continuity.

Authorization marks the condition at (shear=5, strain=17). This state appears with the value of ($q \approx +128$) in the forefront of the lower mountain left-hand side. It is an important behaviour shaping constraint that prevents undesirable processes and outcomes. However, it may also be a balancing force in order to determine potentially strong security measures. Authorization is compelling since an action would not been carried out otherwise. For example displaying a warning for accidents or measures on urgencies for an assault course or event are those actions.

Approaches, marked at (shear=5, strain=19) with a value of ($q \approx +124$) relate to *Consolidation* and points to strengthening of defence measures in anticipation of potential risk-situations. It can be pre-planned or occur spontaneously, but it is in any case a combination of certain action in order to control risky situations that may run out of the norm.

Conceptually, it is only a small step downwards on the hillside in order to encounter the state of *Stability* at (shear=5, strain=21) which has a value of ($q \approx +121$). This state points to the obligations of superiors. Even though there may be no general obligation, wilful neglecting of one's duties is nevertheless contrasting with liability.

Liability is an attractor at (shear=5, strain=23) that relates to a value of ($q \approx +113$) and an ability to cope with a difficult situation. Internal rules and norms as well as superiors, who are accountable, make up the conditions for respectability and legitimacy.

Discussion

The thematic structure of the English translation has developed *Adventure* as its overall and integrating terminus. In particular, this theme appears to settle on a heroic attitude which was observed previously by Toswell (2010). From an intervention point of view, the discovered novelties concern a striking revelation of power and adventure in order to keep

one's autonomy. As the root of the Objective structure, it points towards an expression of energy and vitality. Especially with respect to *Adventure*, the English version embraces all aspects of struggle and survival under rough and demanding conditions. From the English point of view, *Adventure* is intimately related to a capacity to reflect changeability according to environmental demands which requires a radical perspectivation of survival conditions.

Fundamental to the thermodynamic description of the English translation is the fact that *Adaptability*, conceived complementary to survival conditions, implies a high degree of willingness to grasp opportunities in changing situations.

In addition, the text on the Suiones offers the Anglo-Saxon Englishmen a way of maintaining an unbroken timeline of a distinctive English conduct to the challenges of life, namely forcefulness. This appears to be a long-distant line to the roots of English heroism. As Toswell (2010, p. 27) noted, the appeal of the English people to Tacitus over millennia reflects a desire to connect the societal behaviour of English men to the longstanding and deeply rooted Teutonic tradition of enterprise and expansion. For comparative purposes, anchoring this behaviour in its Teutonic origins offers a convenient option for thinking about 'past and present' (Bauschatz, 1985) in terms of adventures and adaptation.

In short, the energy investment in the English case departs to some degree from the investment in the production of the Swedish and Danish landscapes. When measured against bi-componential disparities, the proportional investment, concerning the Orientation, differs only slightly between the Swedish and Danish versions. A more pronounced difference in invested energy is apparently resulting in the English case. Besides the capacity to contribute to unification, a solution must converge on a global state attractor. The major outcome shows that the Orientation, mediated through the produced English translation, indicates that the naming in both components is departing from the other two since the Scandinavian outlook is concentrating mainly on capacity or strength and alertness or watchfulness.

Finally, Toswell asks: why Tacitus? In her opinion the reading of Tacitus seems to offer an insight into the Anglo-Saxon culture and in modern thinking the explication of courageous behaviour. Thus, in treating natural language production as carrier of a continuation between past and present, the standards of the Teutonic heroic age appear to be applicable to the essentially Anglo-Saxon aspect of human conditions in the English context.

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Appendix

Manuals

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Tables

- Table A1** *AaO Coding and Computation of Radians*
- Table A2** *Intervals and Radians of alpha and beta Variables*
- Table A3** *Transformation of beta Variables*
- Table A4** *Transformation of the alpha Variables*
- Table A5** *Extraction of termini from the O-mesh*

Table A1*AaO Coding and Computation of Radians*

<i>Code</i>	<i>String</i>	<i>Count</i>	<i>Calculation</i>	<i>Base</i>	<i>Sum</i>
0	[.]				
0,1	*				
60	Beyond	6	0.3776		
30	these	5	0.354		
	tribes	6	0.3776		
	the	3	0.3068		
	states	6	0.3776		
60	of	2	0.2832		
	the	3	0.3068		
	Suiones	7	0.4012		
0,1	,	1	0.2596		
	not	3	0.2832		
60	on	2	0.2832		
0,1	,	1	0.2596		
0,1	but	3	0.3068		
60	in	2	0.2832		
0,1	,	1	0.2596		
	the	3	0.3068		
	ocean	5	0.354		
0,1	,	1	0.2596		
			5.6404	2.36	8.0004
40	possess	7	0.5338		
50	not	3	0.4082		
50	merely	6	0.5024		
50	arms	4	0.4396		
0,1	and	3	0.4082		
50	men	3	0.4082		
0,1	but	3	0.4082		
50	powerful	8	0.5652		
50	fleets	6	0.5024		
			4.1762	3.14	7.3162
0,1	:	1	0.4257		
30	the	3	0.5031		
	style	5	0.5805		
60	of	2	0.4644		
60	their	5	0.5805		
60	ships	5	0.5805		
			3.1347	3.87	7.0047
40	differs	7	0.6579		
60	in	2	0.4644		
60	this	4	0.5418		

60	respect	7	0.6579		
			2.322	3.87	6.192
0,1	,	1	0.3454		
0,1	that	4	0.4396		
30	there	5	0.471		
			1.256	3.14	4.396
40	is	2	0.3768		
50	a	1	0.3454		
50	prow	4	0.4396		
			1.1618	3.14	4.3018
60	at	2	0.4644		
60	each	5	0.5805		
60	end	4	0.5418		
			1.5867	3.86	5.4467
0,1	,	1	0.5181		
70	with	4	0.6594		
	a	1	0.5181		
	beak	4	0.6594		
	ready	5	0.7065		
			3.0615	4.71	7.7715
60	to	2	0.4644		
60	*		6.28		-9.11587
			6.7444		
0,1	*				
30	*			5.5	3.403336
40	be	2	0.3768		
50	*		6.28		
			6.6568		-2.18152
0,1	*				
30	*			5.5	1.058128
40	driven	6	0.5024		
50	forwards	8	0.5652		
			1.0676	3.14	4.2076
0,1	;	1	0.3454		
30	they	4	0.4396		
30	neither	7	0.5338		
			1.3188	3.14	4.4588
40	work	4	0.4396		
50	it	2	0.3768		
			0.8164	3.14	3.9564
70	with	4	0.6594		
70	sails	5	0.7065		
			1.3659	4.71	6.0759
0,1	,	1	0.3454		
30	nor	3	0.4082		
			0.7536	3.14	3.8936
40	add	3	0.4082		

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50	oars	4	0.4396		
			0.8478	3.14	3.9878
60	in	2	0.4644		
60	banks	5	0.5805		
			1.0449	3.87	4.9149
60	to	2	0.4644		
60	the	3	0.5031		
60	side	4	0.5418		
			1.5093	3.87	5.3793
0,1	:	1	0.3454		
30	the	3	0.4082		
			0.7536	3.14	3.8936
40	gearing	7	0.6579		
60	of	2	0.4644		
60	the	3	0.5031		
60	oars	4	0.5418		
			2.1672	3.87	6.0372
0,1	*				
30	*			5.5	3.526779
40	is	2	0.3768		
50	*		6.28		
			6.6568		1.166301
0,1	*				
30	*			5.5	1.181571
40	detached	8	0.1413		
50	*				
0,1	as	2	0.0942		
60	on	2	0.0942		
	certain	7	0.13345		
	rivers	6	0.1256		
			0.58875	0.785	1.37375
0,1	,	1	0.3454		
0,1	and	3	0.4082		
30	reversible	10	0.628		
30	as	2	0.3768		
30	occasion	8	0.5652		
			2.3236	3.14	5.4636
40	demands	7	0.13345		
50	*				
0,1	,	1	0.08635		
	for	3	0.10205		
80	movement	8	0.1413		
			0.46315	0.785	1.24815
60	in	2	0.4644		
60	either	6	0.6192		
60	direction	9	0.7353		
	.	1	0.4257		
			2.2446	3.87	6.1146

0	*				
60	Among	6	0.3776		
	these	5	0.354		
	peoples	7	0.4012		
	,	1	0.2596		
0,1	further	6	0.3776		
	,	1	0.2596		
0,1	respect	7	0.4012		
			2.4308	2.36	4.7908
40	is	2	0.3768		
50	*		6.28		
			6.6568		-0.22142
0,1	*				
30	*			5.5	3.31121
40	paid	4	0.5418		
60	to	2	0.4644		
60	wealth	6	0.6192		
			1.6254	3.87	5.4954
0,1	,	1	0.3454		
0,1	and	3	0.4082		
	one	3	0.4082		
	man	3	0.4082		
			1.57	3.14	4.71
40	is	2	0.3768		
50	accordingly	11	0.6594		
50	supreme	7	0.5338		
			1.57	3.14	4.71
0,1	,	1	0.5652		
70	with	4	0.6594		
70	no	2	0.5652		
70	restrictions	12	1.0362		
			2.826	4.71	7.536
0,1	and	3	0.3068		
30	with	4	0.3304		
30	an	2	0.2832		
			0.9204	2.36	3.2804
40	unchallenged	12	0.6908		
50	right	5	0.471		
			1.1618	3.14	4.3018
60	to	2	0.4644		
60	obedience	9	0.7353		
			1.1997	3.87	5.0697
0,1	;	1	0.3454		
30	nor	3	0.4082		
			0.7536	3.14	3.8936
40	is	2	0.3768		

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	there	5	0.471		
	any	3	0.4082		
	general	7	0.5338		
			1.7898	3.14	4.9298
0,1	*				
30	*			5.5	3.526779
40	carrying	8	0.6966		
60	of	2	0.4644		
60	arms	4	0.5418		
60	here	4	0.5418		
			2.2446	3.87	6.1146
0,1	,	1	0.4257		
0,1	as	2	0.4644		
60	among	5	0.5805		
60	the	3	0.5031		
60	other	5	0.5805		
60	Germans	7	0.6579		
			3.2121	3.87	7.0821
0,1	:	1	0.3454		
30	rather	6	0.5024		
30	they	4	0.4396		
			1.2874	3.14	4.4274
40	are	3	0.4082		
50	*		6.28		
			6.6882		-7.32027
0,1	*				
30	*			5.5	3.395861
40	locked	6	0.5024		
50	up	2	0.3768		
			0.8792	3.14	4.0192
60	in	2	0.4644		
60	charge	6	0.6192		
			1.0836	3.87	4.9536
60	of	2	0.4644		
60	a	1	0.4257		
60	warder	6	0.6192		
			1.5093	3.87	5.3793
0,1	,	1	0.3454		
0,1	and	3	0.4082		
0,1	that	4	0.4396		
	warder	6	0.5024		
	a	1	0.3454		
	slave	5	0.471		
	.	1	0.3454		
			2.8574	3.14	5.9974
0	*				
	The	3	0.4082		
	ocean	5	0.471		

			0.8792	3.14	4.0192
40	forbids	7	0.5338		
50	sudden	6	0.5024		
50	inroads	7	0.5338		
			1.57	3.14	4.71
60	from	4	0.5418		
	enemies	7	0.6579		
			1.1997	3.87	5.0697
0,1	;	1	0.4257		
0,1	and	3	0.5031		
0,1	,	1	0.4257		
30	besides	7	0.6579		
0,1	,	1	0.4257		
30	bands	5	0.5805		
60	of	2	0.4644		
			3.483	3.87	7.353
40	armed	5	0.471		
50	man	3	0.4082		
			0.8792	3.14	4.0192
0,1	,	1	0.5181		
70	with	4	0.6594		
	nothing	7	0.8007		
			1.9782	4.71	6.6882
60	to	2	0.4644		
60	*		6.28		
			6.7444		-4.94072
0,1	*				
30	*			5.5	2.788358
40	do	2	0.3768		
50	*		6.28		
			6.6568		2.608609
0,1	,	1	0.3454		
30	easily	6	0.5024		
			0.8478	3.14	3.9878
40	become	6	0.5024		
50	riotous	7	0.5338		
			1.0362	3.14	4.1762
0,1	:	1	0.3454		
30	it	2	0.3768		
			0.7222	3.14	3.8622
40	is	2	0.3768		
50	not	3	0.4082		
			0.785	3.14	3.925
60	to	2	0.4644		
60	the	3	0.5031		
60	king's	6	0.6192		
60	interest	8	0.6966		

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			2.2833	3.87	6.1533
60	to	2	0.4644		
60	*		6.28		
			6.7444		-4.57847
0,1	*				
30	*			5.5	3.534752
40	put	3	0.4082		
50	a	1	0.3454		
50	noble	5	0.471		
0,1	or	2	0.3768		
50	a	1	0.3454		
50	freedman	8	0.5652		
			2.512	3.14	5.652
60	in	2	0.4644		
60	charge	6	0.6192		
			1.0836	3.87	4.9536
60	of	2	0.4644		
60	the	3	0.5031		
60	arms	4	0.5418		
0	.	1	0.4257		
			1.935	3.87	5.805

Table A2

Intervals and Radians of beta- and alpha-variables

<i>Case</i>	<i>Interval</i>	<i>Agent</i>	<i>Objective</i>
1	1	8.0004	7.3162
1	2	7.0047	6.1920
1	3	4.3960	4.3018
2	3	4.3960	5.4467
3	3	4.3960	7.7715
4	3	4.3960	-9.1158
5	3	3.4033	-2.1815
6	3	1.0581	4.2076
1	4	4.4588	3.9564
2	4	4.4588	6.0759
1	5	3.8936	3.9878
2	5	3.8936	4.9149
3	5	3.8936	5.3793
1	6	3.8936	1.1663
2	6	3.5267	0.3179
3	6	1.1815	1.3737
1	7	5.4635	1.2481
2	7	5.4635	6.1146
1	8	4.7908	-0.2214
2	8	3.3112	5.4954
1	9	4.7100	4.7100
2	9	4.7100	7.5360
3	9	3.2804	4.3018
4	9	3.2804	5.0697
1	10	3.8936	4.9298
2	10	3.5267	6.1146
3	10	3.5267	7.0871
1	11	4.4273	-4.3109

2	11	3.3958	4.0191
3	11	3.3958	4.9536
4	11	3.3958	5.3793
5	11	3.3958	5.9974
1	12	4.0191	4.7100
2	12	4.0191	5.0697
1	13	7.3530	4.0191
2	13	7.3530	6.6882
3	13	7.3530	-4.9407
4	13	2.7883	2.6162
1	14	3.9874	4.1762
1	15	3.8622	3.9250
2	15	3.8622	6.1533
3	15	3.8622	-4.5784
4	15	3.5347	5.6520
5	15	3.5347	4.9536
6	15	3.5347	5.8050

Table A3*Transformation of beta Variables*

<i>X</i>	<i>Y</i>	<i>Node</i>	<i>Value</i>	<i>Transformation</i>
0	1	D	0	
1	0	1	7.3162	Possess not merely arms and men but powerful fleets
1	1	T₁	7.3162	Powerfulness
2	0	D	0	
3	0	2	6.1920	Differs in this respect
3	1	T₂	6.1920	Dignified Appearance
<i>1</i>	<i>1</i>	<i>T₁</i>	<i>7.3162</i>	<i>Powerfulness</i>
<i>3</i>	<i>1</i>	<i>T₂</i>	<i>6.1920</i>	<i>Dignified Appearance</i>
3	2	T₃	13.5082	Superiority
4	0	3	4.3018	Is a prow
5	0	4	5.4467	At each end
5	1	T₄	9.7485	Proficiency
<i>3</i>	<i>2</i>	<i>T₃</i>	<i>13.5082</i>	<i>Superiority</i>
<i>5</i>	<i>1</i>	<i>T₄</i>	<i>9.7485</i>	<i>Proficiency</i>
5	2	T₅	23.2567	Toughness
6	0	D	0	
7	0	8	4.2076	Driven forwards
7	1	T₆	4.2076	Manoeuvring
<i>5</i>	<i>2</i>	<i>T₅</i>	<i>23.2567</i>	<i>Toughness</i>
<i>7</i>	<i>1</i>	<i>T₆</i>	<i>4.2076</i>	<i>Manoeuvring</i>
7	2	T₇	27.4643	Potency
8	0	D	0	
9	0	9	3.9564	Work it
9	1	T₈	3.9564	Operation
<i>7</i>	<i>2</i>	<i>T₇</i>	<i>27.4643</i>	<i>Potency</i>
<i>9</i>	<i>1</i>	<i>T₈</i>	<i>3.9564</i>	<i>Operation</i>
9	2	T₉	31.4207	Supremacy
10	0	11	3.9878	Add oars
11	0	12	4.9149	In banks
11	1	T₁₀	8.9027	Preparation
12	0	D	0	
13	0	13	5.3793	To the side
13	1	T₁₁	5.3793	Attachment
<i>11</i>	<i>1</i>	<i>T₁₀</i>	<i>8.9027</i>	<i>Preparation</i>
<i>13</i>	<i>1</i>	<i>T₁₁</i>	<i>5.3793</i>	<i>Attachment</i>
13	2	T₁₂	14.282	Ruling

14	0	10	6.0759	With sails
14	0	18	8.7450	Demands for movement
14	1	T₁₃	12.1905	Command
13	2	T ₁₂	14.282	<i>Ruling</i>
14	1	T ₁₃	12.1905	<i>Command</i>
14	2	T₁₄	26.4725	Routing
9	2	T ₉	31.4207	<i>Supremacy</i>
14	2	T ₁₄	26.4725	<i>Routing</i>
14	3	T₁₅	57.8932	Seafaring
15	0	D	0	
16	0	20	5.4954	<i>Paid to wealth</i>
16	1	T₁₆	5.4954	Esteem
14	3	T ₁₅	57.8932	<i>Seafaring</i>
16	1	T ₁₆	5.4954	<i>Esteem</i>
16	3	T₁₇	63.3886	Ingenuity
17	0	21	4.71	Is according supreme
18	0	23	4.3018	Unchallenged right
18	1	T₁₈	9.0118	Unlimited Authority
19	0	D	0	
20	0	26	5.0697	To obedience
20	1	T ₁₉	5.0697	Compliance
18	1	T ₁₈	9.0118	<i>Unlimited Authority</i>
20	1	T ₁₉	5.0697	<i>Compliance</i>
20	2	T₂₀	14.0815	Trusting
16	3	T ₁₇	63.3886	<i>Ingenuity</i>
20	2	T ₂₀	14.0815	<i>Trusting</i>
20	3	T₂₁	77.4701	Resourcefulness
21	0	25	4.9298	Is there any general
22	0	26	6.1146	Carrying of arms here
22	1	T₂₂	11.0444	Shielding
23	0	D	0	
24	0	27	7.0871	As among the other germans
24	1	T ₂₃	7.0871	Fierceness
22	1	T ₂₂	11.0444	<i>Shielding</i>
24	1	T ₂₃	7.0871	<i>Fierceness</i>
24	2	T₂₄	18.1315	Avoidance
20	3	T ₂₁	77.4701	<i>Resourcefulness</i>
24	2	T ₂₄	18.1315	<i>Avoidance</i>
24	3	T₂₅	95.6051	Respect
25	0	29	4.0192	Locked up
26	0	30	4.9236	In Charge
26	1	T₂₆	8.9728	Accountability
27	0	31	5.3793	Of a warder
28	0	32	5.9974	And the warder a slave
28	1	T₂₇	11.3767	Restraints
26	1	T ₂₆	8.9728	<i>Accountability</i>
28	1	T ₂₇	11.3767	<i>Restraints</i>
28	2	T₂₈	20.3495	Liability
24	3	T ₂₅	95.6051	<i>Respect</i>
28	1	T ₂₈	20.3495	<i>Liability</i>
28	3	T₂₉	115.9546	Steadiness
29	0	33	4.71	Forbids sudden inroads
30	0	34	5.0697	From enemies
30	1	T₃₀	9.7797	Obstruction
28	3	T ₂₉	115.9546	<i>Steadiness</i>
30	1	T ₃₀	9.7797	<i>Obstruction</i>
30	3	T₃₁	125.7347	Sustainability
31	0	D	0	
32	0	35	4.0192	Armed man
32	1	T₃₂	4.0192	Forcing

30	3	T_{31}	125.7347	<i>Sustainability</i>
32	1	T_{32}	4.0192	<i>Forcing</i>
32	3	T_{33}	129.7535	Persistence
33	0	D	0	
34	0	39	4.1762	Become riotous
34	1	T_{34}	4.1762	Unbridled
32	3	T_{33}	129.7535	<i>Persistence</i>
34	1	T_{34}	4.1762	<i>Unbridled</i>
34	3	T_{35}	133.9297	Stability
34	8	D	0	
33	8	40	3.925	Is not
33	7	T_{36}	3.925	Negation
32	8	41	6.1533	To the king's interest
31	8	43	5.6520	Put a noble or a freedman
31	7	T_{37}	11.8053	Authorisation
33	7	T_{36}	3.925	<i>Negation</i>
31	7	T_{37}	11.8053	<i>Authorisation</i>
31	6	T_{38}	15.7303	Mistrust
30	8	44	4.9536	In charge
29	8	45	5.805	Of the arms
29	7	T_{39}	10.7586	Guardian
31	6	T_{38}	15.7303	<i>Mistrust</i>
29	7	T_{39}	10.7586	<i>Guardian</i>
29	6	T_{40}	26.4889	Protection
34	3	T_{35}	133.9297	<i>Stability</i>
29	6	T_{40}	26.4889	<i>Protection</i>
29	5	T_{41}	160.04186	Consolidation
28	8	D	0	
27	8	5	7.7715	With a beak ready
27	7	T_{42}	7.7715	Chopping
26	8	D	0	
25	8	22	7.5360	With no restrictions
25	7	T_{43}	7.5360	Unbounded
27	7	T_{42}	7.7715	<i>Chopping</i>
25	7	T_{43}	7.5360	<i>Unbounded</i>
25	6	T_{44}	15.3075	Inroads
24	8	D	0	
23	8	36	6.6882	With nothing
23	7	T_{45}	6.6882	Looseness
25	6	T_{44}	15.3075	<i>Inroads</i>
23	7	T_{45}	6.6882	<i>Looseness</i>
23	6	T_{46}	21.59957	Fury
29	5	T_{41}	160.04186	<i>Consolidation</i>
23	6	T_{46}	21.59957	<i>Fury</i>
23	5	T_{47}	182.4143	Threat
22	8	D	0	
21	8	38	2.616277	Do easily become riotous
21	7	T_{48}	2.616277	Touchy
20	8	D	0	
19	8	17	1.2482	Detached as on certain rivers
19	7	T_{49}	1.2482	Stream Mounting
21	7	T_{48}	2.616277	<i>Touchy</i>
19	7	T_{49}	1.2482	<i>Stream Mounting</i>
19	6	T_{50}	3.864477	Adaptability
18	8	14	1.1663	The ... as on certain rivers
17	8	15	0.3180	Is detached
17	7	T_{51}	1.4843	Off-line
16	8	D	0	
15	8	16	1.3738	As on certain rivers
15	7	T_{52}	1.3738	Conditions

17	7	T_{51}	1.4843	Off-line
15	7	T_{52}	1.3738	Conditions
15	6	T_{53}	2.8581	Peculiarity
19	6	T_{50}	3.864477	Adaptability
15	6	T_{53}	2.8581	Peculiarity
15	5	T_{54}	6.722577	Strangeness
23	5	T_{47}	182.4143	Threat
15	5	T_{54}	6.722577	Strangeness
15	4	T_{55}	189.136877	Hazard
14	8	D	0	
13	8	19	-0.2214	... is paid to wealth
13	7	T_{56}	- 0.2214	Richness
12	8	D	0	
11	8	7	-2.1815	That there ... driven forwards
11	7	T_{57}	-2.1815	Front-wise
13	7	T_{56}	- 0.2214	Richness
11	7	T_{57}	-2.1815	Front-wise
11	6	T_{58}	-2.4029	Vigour
10	8	D	0	
9	8	28	-4.31094	Rather they are locked up
9	7	T_{59}	-4.31094	Safekeeping
8	8	D	0	
7	8	37	-4.9407	Bands ... of riotous ...
7	7	T_{60}	-4.9407	Tumult
9	7	T_{59}	-4.31094	Safekeeping
7	7	T_{60}	-4.9407	Tumult
7	6	T_{61}	-9.25164	Hindrance
6	8	D	0	
5	8	42	-4.5785	It ... noble and freedman
5	7	T_{62}	-4.5785	Selectivity
7	6	T_{61}	-9.25164	Hindrance
5	7	T_{62}	-4.5785	Selectivity
5	6	T_{63}	-13.83014	Segregation
11	6	T_{58}	-2.4029	Vigour
5	6	T_{63}	-13.83014	Segregation
5	5	T_{64}	-16.23304	Fitness
4	8	D	0	
3	8	6	-9.1159	That there ... to be driven ...
3	7	T_{65}	-9.1159	Force
5	5	T_{64}	-16.23304	Fitness
3	7	T_{65}	-9.1159	Force
3	5	T_{66}	-24.34894	Strengthening
15	4	T_{55}	189.136877	Hazard
3	5	T_{66}	-24.34894	Strengthening
3	4	T_{67}	164.787937	Adventure

Table A4*Transformation of alpha variables*

Var	Rad	Var	Rad	Var	Rad	Var	Rad	Var	Rad
3	4.3960	T_{12}	20.4758	T_{23}	83.8935	40	3.8622	35	7.3530
4	4.3960	T_{13}	7.4204	T_{26}	10.947	41	3.8622	36	7.3530
T1	8.7920	T14	27.8962	T_{27}	94.8405	T_{40}	7.7244	T_{53}	14.706
5	4.3960	17	5.4636	28	4.4274	42	3.8622	D	0
6	4.3960	18	5.4636	29	3.3959	43	3.5348	37	7.3530
T2	8.7920	T15	10.9272	T28	7.8233	T41	7.397	T54	7.3530
T_{11}	8.7920	19	4.7908	30	3.3959	T_{40}	7.7244	T_{53}	14.706

T2	8.7920	20	3.3112	31	3.3959	T41	7.397	T54	7.3530
T3	17.5840	T16	8.1020	T29	6.7918	T42	15.1214	T55	22.059
D	0	T15	10.9272	T28	7.8233	44	3.5348	T52	15.0051
7	3.4033	T16	8.1020	T29	6.7918	45	3.5348	T55	22.059
T4	3.4033	T17	19.0292	T30	14.6151	T43	7.0696	T56	37.0641
T3	17.5840	T12	20.4758	D	0	T42	15.1214	T49	152.0964
T4	3.4033	T17	19.0292	32	3.3959	T43	7.0696	T56	37.0641
T5	20.9873	T18	46.9254	T31	3.3959	T44	22.191	T57	189.1605
D	0	T5	20.9873	T30	14.6151	T39	127.6657		
9	4.396	T18	46.9254	T31	3.3959	T44	22.191		
T6	4.396	T19	67.9127	T32	18.011	T45	149.8567		
D	0	21	4.71	T27	94.8405	D	0		
10	4.396	22	4.71	T32	18.011	8	1.0581		
T7	4.396	T20	9.42	T33	112.8515	T46	1.0581		
T6	4.396	23	3.2804	33	4.0192	D	0		
T7	4.396	24	3.2804	34	4.0192	16	1.1816		
T8	8.792	T21	6.5608	T34	8.0384	T47	1.1816		
11	3.8936	T20	9.42	T33	112.8515	T46	1.0581		
12	3.8936	T21	6.5608	T34	8.0384	T47	1.1816		
T9	7.7872	T22	15.9808	T35	120.8899	T48	2.2397		
T8	8.792	T19	67.9127	D	0	T45	149.8567		
T9	7.7872	T22	15.9808	38	2.7884	T48	2.2397		
T10	16.5792	T23	83.8935	T36	2.7884	T49	152.0964		
D	0	25	3.8936	T35	120.8899	D	0		
13	3.8936	26	3.5267	T36	2.7884	1	8.0004		
T11	3.8936	T24	7.4203	T37	123.6783	T50	8.0004		
T10	16.5792	D	0	D	0	D	0		
T11	3.8936	27	3.5267	39	3.9874	2	7.0047		
T12	20.4758	T25	3.5267	T38	3.9874	T51	7.0047		
14	3.8936	T24	7.4203	T37	123.6783	T50	8.0004		
15	3.8936	T25	3.5267	T38	3.9874	T51	7.0047		
T13	7.4204	T26	10.947	T39	127.6657	T52	15.0051		

Table A5*Extraction of termini from the O-mesh*

X	Y	A-component	O-component	English	Fusion
		<i>Pendulum</i>	<i>Destination</i>	<i>Extraction</i>	<i>Value (q)</i>
1	1	T ₁ : 4 → 3	T _{O4}	Proficiency	8.7920
3	1	T ₂ : 6 → 5	T _{O2}	Chopping	8.7920
3	2	T ₃ : T _{A2} → T _{A1}	T _{O3}	Superiority	17.5840
5	1	T ₄ : D → 7	T _{O57}	Front-wise	3.4033
5	2	T ₅ : T _{A4} → T _{A3}	T _{O5}	Toughness	20.9873
7	1	T ₆ : D → 9	T _{O8}	Operation	4.4588
9	1	T ₇ : D → 10	T _{O13}	Command	4.4588
9	2	T ₈ : T _{A7} → T _{A6}	T _{O6}	Manoeuvring	8.792

11	1	$T_9: 11 \rightarrow 12$	T_{O10}	Preparation	7.7872
11	2	$T_{10}: T_{A9} \rightarrow T_{A8}$	T_{O8}	Operation	16.5792
13	1	$T_{11}: D \rightarrow 13$	T_{O11}	Attachment	3.8936
13	2	$T_{12}: T_{A11} \rightarrow T_{A10}$	T_{O12}	Ruling	20.4758
15	1	$T_{13}: 14 \rightarrow 15$	T_{O51}	Off-line	7.4204
15	2	$T_{14}: T_{A13} \rightarrow T_{A12}$	T_{O14}	Routing	27.8962
17	1	$T_{15}: 17 \rightarrow 18$	T_{O13}	Command	10.9272
19	1	$T_{16}: 19 \rightarrow 20$	T_{O16}	Esteem	8.1020
19	2	$T_{17}: T_{A16} \rightarrow T_{A15}$	T_{O17}	Ingenuity	19.0292
19	3	$T_{18}: T_{A17} \rightarrow T_{A14}$	T_{O15}	Seafaring	46.9254
19	4	$T_{19}: T_{A18} \rightarrow T_{A5}$	T_{O7}	Potency	67.9127
21	1	$T_{20}: 21 \rightarrow 22$	T_{O43}	Unbounded	9.42
23	1	$T_{21}: 23 \rightarrow 24$	T_{O19}	Compliance	6.5608
23	2	$T_{22}: T_{A21} \rightarrow T_{A20}$	T_{O20}	Trusting	15.9808
23	4	$T_{23}: T_{A22} \rightarrow T_{A19}$	T_{O20}	Trusting	83.8935
25	1	$T_{24}: 25 \rightarrow 26$	T_{O22}	Shielding	7.4203
27	1	$T_{25}: D \rightarrow 27$	T_{O23}	Fierceness	3.5267
27	2	$T_{26}: T_{A25} \rightarrow T_{A24}$	T_{O24}	Avoidance	10.947
27	4	$T_{27}: T_{A26} \rightarrow T_{A23}$	T_{O24}	Avoidance	94.8405
27	7	$T_{28}: 28 \rightarrow 29$	T_{O26}	Accountability	7.8233
25	7	$T_{29}: 30 \rightarrow 31$	T_{O28}	Liability	6.7918
25	6	$T_{30}: T_{A29} \rightarrow T_{A28}$	T_{O28}	Liability	14.6151
23	7	$T_{31}: D \rightarrow 32$	T_{O28}	Restraints	3.3959
23	6	$T_{32}: T_{A31} \rightarrow T_{A30}$	T_{O30}	Obstruction	18.011
23	5	$T_{33}: T_{A32} \rightarrow T_{A27}$	T_{O28}	Liability	112.8515
21	7	$T_{34}: 33 \rightarrow 34$	T_{O30}	Obstruction	8.0384
21	5	$T_{35}: T_{A34} \rightarrow T_{A33}$	T_{O35}	Stability	120.8899
19	7	$T_{36}: D \rightarrow 38$	T_{O48}	Touchy	2.7884
19	5	$T_{37}: T_{A36} \rightarrow T_{A35}$	T_{O41}	Consolidation	123.6783
17	7	$T_{38}: D \rightarrow 39$	T_{O34}	Unbridled	3.9874
17	5	$T_{39}: T_{A38} \rightarrow T_{A37}$	T_{O37}	Authorization	127.6657
15	7	$T_{40}: 40 \rightarrow 41$	T_{O37}	Authorization	7.7244
13	7	$T_{41}: 42 \rightarrow 43$	T_{O37}	Authorization	7.397
13	6	$T_{42}: T_{A41} \rightarrow T_{A40}$	T_{O40}	Protection	15.1214
11	7	$T_{43}: 44 \rightarrow 45$	T_{O39}	Guardian	7.0696
11	6	$T_{44}: T_{A43} \rightarrow T_{A42}$	T_{O44}	Inroads	22.191
11	5	$T_{45}: T_{A44} \rightarrow T_{A39}$	T_{O40}	Protection	149.8567
9	7	$T_{46}: D \rightarrow 8$	T_{O6}	Manoeuvring	1.0581
7	7	$T_{47}: D \rightarrow 16$	T_{O52}	Skills	1.1816
7	6	$T_{48}: T_{A47} \rightarrow T_{A46}$	T_{O46}	Fury	2.2397
7	5	$T_{49}: T_{A48} \rightarrow T_{A45}$	T_{O46}	Fury	152.0964
4	7	$T_{50}: D \rightarrow 1$	T_{O1}	Powerfulness	8.0004
2	7	$T_{51}: D \rightarrow 2$	T_{O2}	Dignified Appearance	7.0047
2	6	$T_{52}: T_{A51} \rightarrow T_{A50}$	T_{O54}	Strangeness	15.0051
6	1	$T_{53}: 35 \rightarrow 36$	T_{O48}	Custody	14.706
4	1	$T_{54}: D \rightarrow 37$	T_{O57}	Front-wise	7.3530
4	2	$T_{55}: T_{A54} \rightarrow T_{A53}$	T_{O53}	Pecularity	22.059

4	3	$T_{56}: T_{A55} \rightarrow T_{A52}$	T_{O53}	Pecularity	37.0641
4	4	$T_{57}: T_{A56} \rightarrow T_{A49}$	T_{O12}	Adaptability	189.1605